

Abstract

A drive circuit of a piezoelectric pump that is both light and compact, that can drive a piezoelectric pump with a low level of undesired noise, and that can further realize with low power consumption a coolant device capable of reliable operation at the time of activation.

A piezoelectric element of the piezoelectric pump is driven by the output signal of an amplifier that takes as input a signal that is generated by a sine wave oscillator of the same frequency that drives the piezoelectric element. The amplifier is driven by a high voltage obtained by conversion from a low-voltage power supply by a voltage-boosting converter, whereby the piezoelectric element is driven by a low-frequency sine wave of high voltage. The frequency of the sine wave oscillation is further adjusted by a signal from a first control circuit at the time of activation. In addition, the amplitude of the sine wave oscillation is adjusted by the output signal of a second control circuit that takes as input a signal from temperature sensor for sensing the temperature of the heat-generating body.